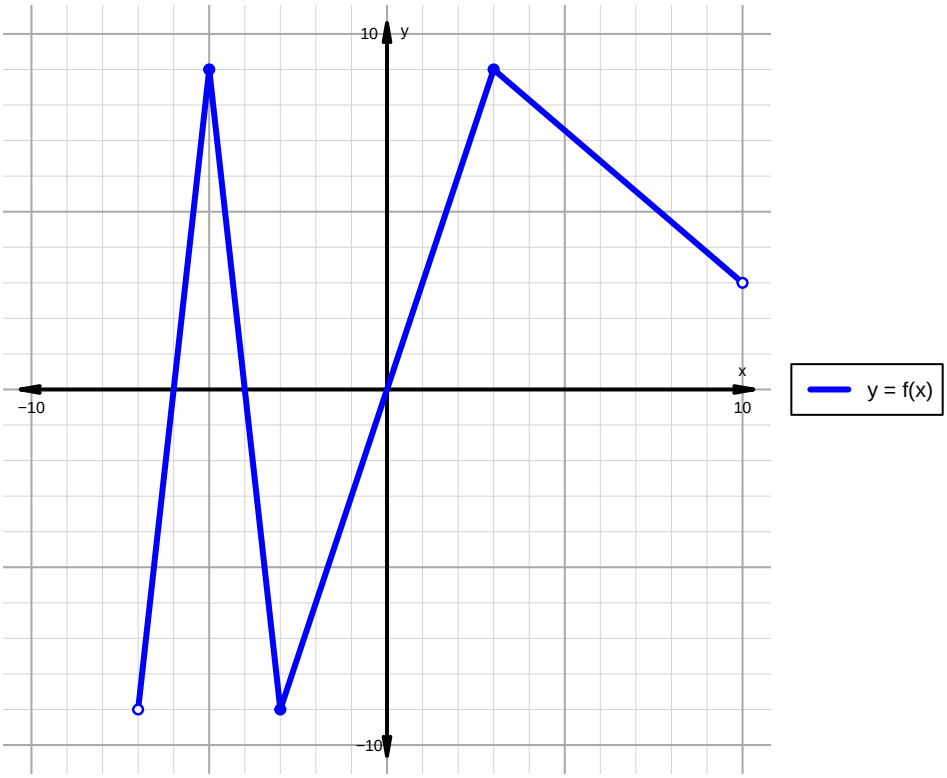
Name: Date:

Intervals, Transformations, and Slope Solution (version 170)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-6,-4) \cup (0,10)$
Negative	$(-7,-6) \cup (-4,0)$
Increasing	$(-7,-5) \cup (-3,3)$
Decreasing	$(-5,-3) \cup (3,10)$
Domain	$(-7,10)$
Range	$(-9,9)$

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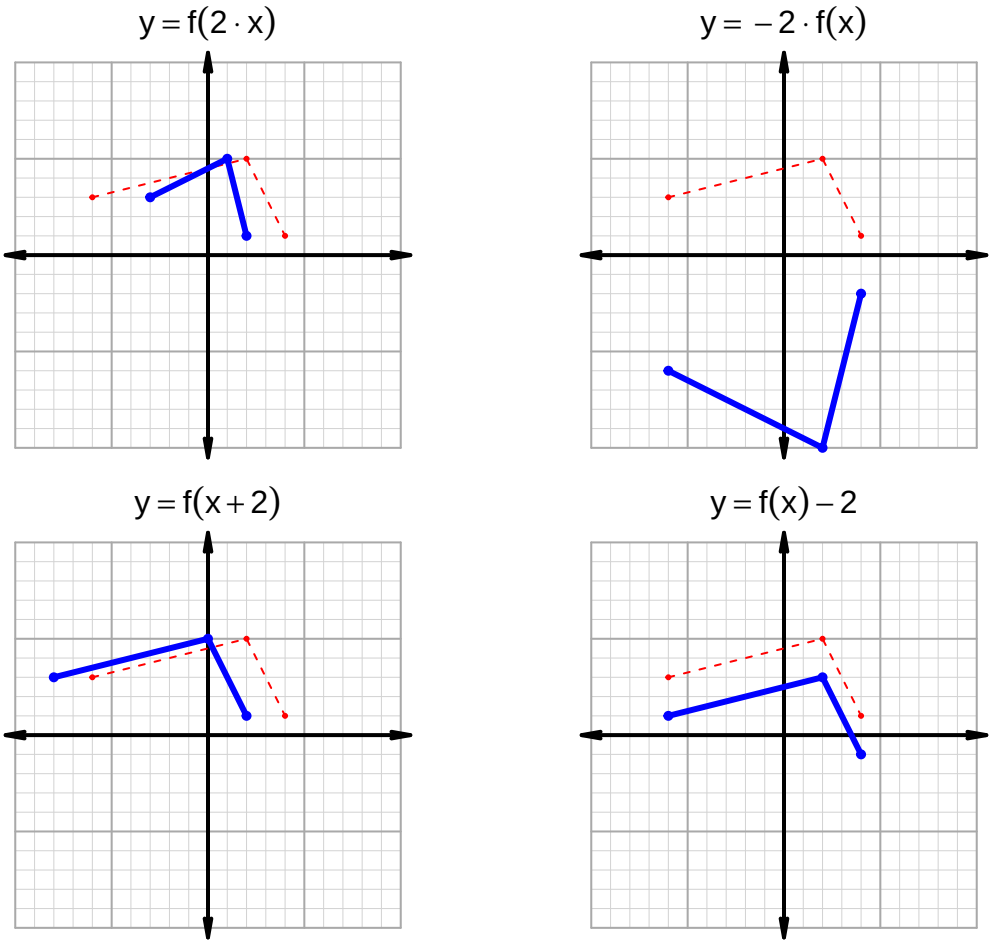
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 30$ and $x_2 = 48$. Express your answer as a reduced fraction.

x	$g(x)$
30	55
48	71
55	48
71	30

$\frac{g(48)-g(30)}{48-30} = \frac{71-55}{48-30} = \frac{16}{18}$

The greatest common factor of 16 and 18 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{8}{9}$$